

Technical Notes

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SOURCES OF DATA

Information on births, deaths and fetal deaths is compiled from the original documents filed with the Arizona Department of Health Services', Office of Vital Records and from transcripts of original certificates filed in other states but affecting Arizona residents. (Copies of certificates for births, deaths and fetal deaths occurring to Arizona residents outside the United States are not sent to Arizona).

Information on induced terminations of pregnancy (abortions) performed on Arizona women is compiled from reports sent to the Arizona Department of Health Services by facilities within but not outside the state.

Pregnancies are the sum of live births, spontaneous terminations of pregnancy (fetal deaths or stillbirths) and induced terminations of pregnancy (abortions).

Arizona has no central registry for marriage and divorce records. Statistics are limited to counts of marriages and divorces reported monthly by the Clerk of the Superior Court in each county in which the marriage or divorce occurred. These reports contain no demographic data on the people marrying or divorcing.

Data on morbidity, levels of disease and disability in the population, are obtained for certain infectious diseases that must be reported by law. The ADHS Epidemiology and Disease Control Services conducts surveillance and monitoring of these notifiable diseases and provided data for the morbidity sections in this report.

Population denominators for Arizona residents, used to calculate rates, are projections from the Population Statistics Unit in the Arizona Department of Economic Security (data for 1989 and 1993-1999) and the U.S. Census Bureau (data for 1980 and 1990). In order to obtain the 1991 and 1992 population denominators, the 1990 percentages of population breakdowns (or census shares) by age group and gender were applied to total state and county population estimates published by the DES.

Population denominators by ethnic group for Arizona for 1999 were obtained from the U.S. Census Bureau (see **Detailed State Projection Data Files: 1995 to 2025** at <http://www.census.gov>).

Requests for additional Arizona statistics on births, deaths, marriages, dissolutions of marriage and spontaneous and induced terminations of pregnancy, should be directed to the Office of Epidemiology and Statistics of the Arizona Department of Health Services, 2700 North 3rd Street, Room 4075, Phoenix, AZ 85004-1186 (Phone: (602) 542-1216; FAX: (602) 542-2940).

Some additional information on topics such as morbidity from certain diseases or population composition is available from the following sources:

Birth Defects - Arizona Birth Defects Monitoring Program, Office of Health Registries, ADHS, (602) 542-7310

Cancer morbidity - Arizona Cancer Registry, Office of Health Registries, ADHS, (602) 542-7328

Domestic violence - Community Services Administration, ADES, (602) 542-6600

Drowning incidence in Maricopa County, Bureau of Public Health Statistics, ADHS, (602) 542-7331

HIV/AIDS morbidity - Office of HIV/STD Services, ADHS, (602) 230-5819

Hospital inpatient discharge data - Cost Reporting and Review, Office of Epidemiology and Statistics, ADHS, (602) 542-2960

Immunization coverage levels of children - Arizona Immunization Program, ADHS, (602) 230-5837

Licensed medical doctors - Board of Medical Examiners, (602) 255-3751

Sexually Transmitted Diseases morbidity - Office of HIV/STD Services, ADHS, (602) 230-5900

Smoking, seat belt use, physical inactivity and other behavioral risk factors - Behavioral Risk Factors Surveillance System, Office of Epidemiology and Statistics, ADHS, (602) 542-2974

Population estimates and projections - Population Statistics Unit, ADES, (602) 542-5984

DEFINITIONS

Urban and Rural Areas

In this report, Maricopa, Pima, Pinal and Yuma counties comprise Arizona's urban areas. The remaining counties (Apache, Cochise, Coconino, Gila, Graham, Greenlee, La Paz, Mohave, Navajo, Santa Cruz and Yavapai) comprise Arizona's rural areas.

In addition, Coconino and Mohave counties are now portions of the newly established Metropolitan Statistical Areas (MSAs) which are not Arizona-specific but comprise out-of-state counties in Utah and Nevada. For the purpose of this report, Coconino and Mohave counties are not included in the definition of Arizona's urban areas.

Race/Ethnicity

The Arizona birth and death certificates record Hispanic origin for all races which permits differentiation of persons classified as "white", "Black", "American Indian" or "Asian" into those who simultaneously are or not of Hispanic origin. However, only about 3.3 percent of Arizona's Hispanic residents are non-white. Race/ethnic designations used in this report are non-Hispanic white, Hispanic, Black (or African-American), American Indian (or Native American, including Aleut and Eskimo) and Asian (Asian or Pacific Islander). In some of the trend tables the designation "Other" includes Asian and Pacific Islanders. Non-white Hispanics are included in their appropriate race groups.

The American Indian figures include those living both on and off the reservation. Information on a specific tribe is not reported.

Ethnicity of mother, father or decedent is as stated on the certificate. Ethnicity of infant is determined from ethnicity of the parent(s) using classification procedures established by the National Center for Health Statistics. When only one parent is white, the child is assigned to the other parent's race. When neither parent is white, the child is assigned the race of the father, except if either parent is Hawaiian, the child is assigned to Hawaiian. If race is not reported, the child is assigned the race of the parent for whom race is given. Infant is classified as Hispanic if either one or both parents are of Hispanic origin.

Beginning in 1989, the National Center for Health Statistics has changed its method of computing infant mortality rates from race/ethnicity of child to race/ethnicity of mother. Consequently, infant mortality rates under new tabulating procedure tend to be lower for non-Hispanic white infants and higher for minority infants than they are when computed by the previous method. For consistency, all trend tables in this report continue presenting infant mortality rates by child's race. The rates by mother's race are shown in Table 2C-4.

Rates

Rate is a measure of the frequency of some event in relation to a unit of population during a specified time period such as a year; events in the numerator of the year occur to individuals in the denominator. Rates express the likelihood (or risk) of the event in the specified population during a particular time and are generally expressed as units of population in the denominator (per 1,000, per 100,000 and so forth).

Many rates shown in this report are based on a small population, a small number of events or both. Rates based on small numbers are unreliable and thus should be viewed with caution. Rates for many counties or Arizona's ethnic minorities also vary considerably from year to year due to small populations and few events.

Terms Related to Reproductive Health*

Abortion Rate - Number of reported abortions to females of all ages during a calendar year per 1,000 females of childbearing age (15-44 years).

Abortion Ratio - Number of abortions reported during a period per 1,000 live births occurring during the same period.

*See "Standard Terminology for Reporting Reproductive Health in the United States". Public Health Reports, Vol.103, No.5. September-October 1988.

Birth or Live Birth - The complete expulsion or extraction from its mother of a product of human conception, irrespective of the duration of pregnancy which, after such expulsion or extraction, breathes or shows any other evidence of life such as beating of the heart, pulsation of the umbilical cord or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached.

Birth rate - Number of live births during a calendar year per 1,000 population.

Birth weight - The weight of a neonate determined immediately after delivery or as soon thereafter as possible.

Fetal death - Death prior to the complete expulsion or extraction from the mother of a product of human conception, fetus and placenta, irrespective of the duration of pregnancy. The death is indicated by the fact that, after such expulsion or extraction, the fetus does not breathe or show any other evidence of life, such as beating of the heart, pulsation of the umbilical cord or definite movement of voluntary muscles. This definition excludes induced terminations of pregnancy.

Fetal death ratio (I) - Number of fetal deaths at 20 or more weeks of gestation per 1,000 live births.

Fetal death ratio (II) - Number of fetal deaths of 500 grams or more per 1,000 live births.

Fertility rate (general) - Total number of live births to women of all ages during a calendar year per 1,000 **women** of childbearing age (15-44 years old).

Fertility rate (total) - The sum of age-specific birth rates of women at each age group 10-14 through 45-49. Since 5-year age groups are used, the sum is multiplied by 5.

Infant death - Any death at any time from birth up to, but not including, the first year of age (364 days, 23 hours, 59 minutes from the moment of birth).

Infant mortality rate - Number of infant deaths per 1,000 live births.

Low-birthweight - Prior to 1990: any neonate whose weight at birth is 2,500 grams or less. Beginning in 1990: any neonate weighing less than 2,500 grams at birth (less than 5 pounds 8 ounces).

Maternal mortality rate - Number of deaths attributed to maternal conditions (i.e. related to or aggravated by pregnancy or its management) per 100,000 live births.

Neonatal death - Death of a liveborn neonate before the neonate becomes 28 days old (up to and including 27 days, 23 hours, 59 minutes from the moment of birth).

Neonatal mortality rate - Number of neonatal deaths per 1,000 live births.

Perinatal mortality ratio (I) - The sum of infant deaths of less than 7 days and fetal deaths with a stated or presumed period of gestation of 28 weeks or more per 1,000 live births.

Perinatal mortality ratio (II) - The sum of infant deaths of less than 28 days and fetal deaths with a stated or presumed period of gestation of 20 weeks or more per 1,000 live births.

Perinatal mortality ratio (III) - The sum of infant deaths of less than 7 days and fetal deaths with a stated or presumed period of gestation of 20 weeks or more per 1,000 live births.

Postneonatal death - Any death of a liveborn infant at least 28 days of age but less than one year of age.

Postneonatal mortality rate - Number of postneonatal deaths per 1,000 live births.

Post term - Any neonate whose birth occurs from the beginning of the first day (295th day) of the 43rd week following onset of the last menstrual period.

Pregnancy rate - The sum of live births, fetal deaths and induced terminations of pregnancy per 1,000 women of childbearing age (15-44 years old).

Preterm - Any neonate whose birth occurs through the end of the last day of the 37th week (259th day), following onset of the last menstrual period.

Term - Any neonate whose birth occurs from the beginning of the first day (260th day) of the 38th week, through the end of the last of the 42nd week (294th day), following onset of the last menstrual period.

Very Low-Birthweight - Any neonate whose weight at birth is 1,500 grams or less (less than 3 pounds 5 ounces).

Terms Related to Mortality

Age-adjusted mortality rates - Because mortality from most causes of death occurs predominately among the elderly, a population group with a larger proportion of older persons would have a higher mortality rate. The "age-adjustment" removes the effect of the age differences among sub-populations by placing them all in a population with a standard age distribution. All age-adjusted mortality rates in this report were computed by the direct method, that is by applying the age-specific death rates to the standard population distributed by age. The total U.S. population as enumerated in 1940 was selected as the standard. For consistency with previously published rates, the age-adjusted mortality rates in this report are based on the following nine age groups:

Age	Population per million
All ages	1,000,000
Under 1 year	15,343
1-4 years	64,718
5-14 years	170,335
15-24 years	181,677
25-34 years	162,066
35-44 years	139,237
45-54 years	117,811
55-64 years	80,294
65 years and over	68,499

Age-specific mortality - Number of deaths in a specific age group during a calendar year.

Cause of death - For the purpose of national mortality statistics, every death is attributed to one underlying condition, based on information reported on the death certificate and utilizing the international rules for selecting the underlying cause of death from the reported conditions.

Cause-specific mortality - Number of deaths from a specified cause during a calendar year.

Classification of causes of death - The cause of death used in this report is the underlying cause classified according to the *International Classification of Diseases, Injuries and Causes of Death*. Listed below are categories and International Classification of Diseases (ICD) codes for selected causes of mortality presented in this report.

Alcoholism: 291, 303, 571.0-571.3
Alzheimer's Disease: 331.0
Atherosclerosis: 440
Breast Cancer in women: 174
Cancer of the uterine cervix: 180
Cardiovascular Disease: 390-448
Cerebrovascular Disease (Stroke): 430-438
Chronic Obstructive Pulmonary Disease (COPD): 490-496
Cirrhosis: 571
Colorectal Cancer: 153.0-154.3, 154.8, 159.0
Coronary Heart Disease: 410-414, 402, 429.2
Diabetes Mellitus: 250
Diseases of Heart: 390-398, 402, 404-429
Diseases of Arteries, Arterioles and Capillaries: 441-448
Drowning: 830, 832, 910
Drug-Related Deaths: 292, 304, 305.2-305.9, E850-E858, E950.0-E950.5, E962.0, E980.0-E980.5
Fall-related Deaths: 880-888
Firearm-Related Deaths: E922.0-E922.3, E922.8-E922.9, E955.0-E955.4, E965.0-E965.4, E970, E985.0-E985.4

HIV Infection: 042-044

Homicide and legal intervention: 960-978

Infectious and parasitic diseases: 001-139

Injuries Not Related to Motor Vehicles:

800-807, 826-949

Injuries, Unintentional: 800-949

Lung Cancer: 162.2-162.9

Malignant Neoplasms (cancers): 140-208

Motor Vehicle-Related Injuries: 810-825

Nephritis, Nephritic Syndrome and Nephrosis: 580-589

Pneumonia and Influenza: 480-487

Prostate Cancer: 185

Septicemia: 038

Suicide: 950-959

See also Tables 2B-7, 2B-8, 2B-11, 2C-6 and 3A-2 for some specific subsets of ICD codes.

Medical Terms Used on the Birth Certificate

Medical risk factors for this pregnancy

Anemia - Hemoglobin level of less than 10.0 g/dL during pregnancy, or hematocrit of less than 30 percent during pregnancy.

Cardiac disease - Disease of the heart.

Acute or chronic lung disease - Disease of the lungs during pregnancy.

Diabetes - Metabolic disorder characterized by excessive discharge of urine and persistent thirst; includes juvenile onset, adult onset and gestational diabetes during pregnancy.

Genital herpes - Infection of the skin of the genital area by herpes simplex virus.

Hydramnios/Oligohydramnios - Any noticeable excess (hydramnios) or lack (oligohydramnios) of amniotic fluid.

Hemoglobinopathy - A blood disorder caused by alteration in the genetically determined molecular structure of hemoglobin (for example, sickle cell anemia).

Hypertension, chronic - Blood pressure persistently greater than 140/90, diagnosed prior to onset of pregnancy or before the 20th week of gestation.

Hypertension, pregnancy-associated - An increase in blood pressure of at least 30 mm hg systolic or 15 mm hg diastolic on two measurements taken 6 hours apart after the 20th week of gestation.

Eclampsia - The occurrence of convulsions and/or coma unrelated to other cerebral conditions in women with signs and symptoms of preeclampsia.

Incompetent cervix - Characterized by painless dilation of the cervix in the second trimester or early in the third trimester of pregnancy, with premature expulsion of membranes through cervix and ballooning of the membranes into vagina, followed by rupture of the membrane and subsequent expulsion of the fetus.

Previous infant 4,000+ grams - The birthweight of a previous live-born child was over 4,000 grams (8lbs.14oz.).

Previous preterm or small-for-gestational-age-infant - Previous birth of an infant prior to term (before 37 completed weeks of gestation) or of an infant weighing less than the 10th percentile for gestational age using a standard weight for age chart.

Renal disease - Kidney disease.

Rh Sensitization - The process or state of becoming sensitized to the Rh factor as when an Rh-negative woman is pregnant with an Rh-positive fetus.

Uterine bleeding - Any clinically significant bleeding during the pregnancy taking into consideration the stage of pregnancy; any second or third trimester bleeding or third trimester bleeding of the uterus prior to the onset of labor.

Complications of labor and/or delivery

Febrile - A fever greater than 100 degrees F. or 38 degrees C. occurring during labor and/or delivery.

Meconium, moderate/heavy - Meconium consists of undigested debris from swallowed amniotic fluid, various products of secretion and shedding by the gastrointestinal tract, moderate to heavy amounts of meconium in the amniotic fluid noted during labor and/or delivery.

Premature rupture of membranes (more than 12 hours) - Rupture of membranes at any time during pregnancy and more than 12 hours before the onset of labor.

Abruptio placenta - Premature separation of normally implanted placenta from the uterus.

Placenta previa - Implantation of the placenta over or near the internal opening of the cervix.

Other excessive bleeding - The loss of significant amount of blood from conditions other than abruptio placenta or placenta previa.

Seizures during labor - Maternal seizures occurring during labor from any cause.

Precipitous labor (less than 3 hours) - Extremely rapid labor and delivery lasting less than 3 hours.

Prolonged labor (more than 20 hours) - Abnormally slow progress of labor lasting more than 20 hours.

Dysfunctional labor - Failure to progress in a normal pattern of labor.

Breech/Malpresentation - At birth, the presentation of the fetal buttocks, rather than the head or other malpresentation.

Cephalopelvic disproportion - The relationship of the size, presentation and position of the fetal head to the maternal pelvis, which prevents dilation of the cervix and/or descent of the fetal head.

Cord prolapse - Premature expulsion of the umbilical cord in labor before the fetus is delivered.

Anesthetic complications - Any complication during labor and/or delivery brought on by an anesthetic agent or agents.

Fetal distress - Signs indicating fetal hypoxia (deficiency in amount of oxygen reaching fetal tissues).

Abnormal conditions of the newborn

Anemia - Hemoglobin level of less than 13.0 g/dL, or a hematocrit of less than 39 percent.

Birth injury - Impairment of the infant's body function or structure due to adverse influences that occurred at birth.

Fetal alcohol syndrome - A syndrome of altered prenatal growth and development occurring in infants born of women who consumed excessive amounts of alcohol during pregnancy.

Hyaline membrane disease/RDS - A disorder primarily of prematurity, manifested clinically by respiratory distress and pathologically by pulmonary hyaline membranes and incomplete expansion of the lungs at birth.

Meconium aspiration syndrome - Aspiration of meconium by the fetus or newborn, affecting the lower respiratory system.

Assisted ventilation (less than 30 minutes) - A mechanical method of assisting respiration for newborns with respiratory failure.

Assisted ventilation (30 minutes or more) - Newborn placed on assisted ventilation for 30 minutes or longer.

Seizures - A seizure of any etiology.